



ABSTRACT AND BIOGRAPHY

Model-Based Systems Engineering (MBSE)

The practice of systems engineering is transitioning from a document-based approach to a model-based approach. In a model based systems engineering approach, emphasis is placed on defining, managing and controlling a coherent model of the system that can then be reflected in systems engineering documentation such as specifications, interface control documentation, system design documentation, and trade studies and analysis reports. This presentation will provide an overview of the benefits of MBSE over a document-based approach in terms of how it can improve productivity, quality, and enhance system reuse. The presentation will also highlight how MBSE can be used to flow requirements down from the mission level to the system design and to the hardware and software components. Some of the lessons learned from early applications of MBSE using the Systems Modeling Language (OMG SysML™) standard will also be presented. In addition, the presentation will include a summary of the MBSE Initiative at the International Council on Systems Engineering (INCOSE).

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Sanford Friedenthal currently leads an effort to enable model based systems development (MBSD) across the Lockheed Martin in support of the Corporate Systems and Software Initiative (SSI). His experience includes the application of systems engineering throughout the system life cycle from conceptual design, through development and production on a broad range of systems in aerospace and defense. He has been a systems engineering department manager, and a lead developer of advanced systems engineering processes and methods including the Lockheed Martin Integrated Enterprise Process and the Object-Oriented Systems Engineering Method (OOSEM). Mr. Friedenthal was a leader of the Industry Standards effort through the Object Management Group (OMG) and INCOSE to develop the Systems Modeling Language (OMG SysML™) that was adopted by the OMG in 2006. Sanford is co-author of the recently published book "A Practical Guide to SysML".